Special Marketing Report

Programmer, Get Thee to the Internet!

By Kevin M. Savetz

The Internet never sleeps. The world's largest computer network hums away 24 hours a day—which is good to know if you're a programmer, wide awake and miserable at 3 A.M. because your code won't compile for some unfathomable reason. The Internet is rife with experts in every imaginable field—and as you might expect, it's full of resources for Macintosh programmers: databases of information, source code snippets, and expert advice.

Every day, some 20 million people in 150 countries access the Internet to exchange electronic mail, information, and files. It doesn't matter whether your signature is emblazoned inside the earliest Macintosh computer or you're just getting past programs that print "Hello, World!" on the screen—you can get help on the Internet, even at 3 A.M.

There are a multitude of services you can use to access the Internet. Some connections give you a wide variety of Internet services and tools; others limit you to relatively few. Many Internet service providers do not offer full access to the Internet's functions. The most basic level of Internet access is electronic mail, which enables you to exchange e-mail with users on the Internet and other networks.

A more complete Internet connection includes access to Usenet (also known as *newsgroups* or *netnews*)—the "bulletin board" of the Internet, where you can read and post messages on any of 9,000-plus topics.

And an even better Internet connection features still more tools—programs that enable you to connect with other people and computers in "real time." These include Telnet, FTP (File Transfer Protocol), and Gopher. The brass ring of Internet tools is the World Wide Web—this is the tool that provides a snazzy hypertext graphical interface.

If you're a "newbie" (a person new to the Internet), read on for ideas on how to get connected. If you're already online, jump to the section "Programmer Resources on the World Wide Web" on page 30 for pointers to some of the best Internet resources for programmers.

Getting Connected—For "Newbies" Only

Before you can explore the Internet, you have to "plug in." That is, you must have access to a computer that is connected to the network. When you buy a telephone, it doesn't work right out of the box; before you make that first call, you must plug your phone into a telephone line and hear a dial tone. Similarly, you can't dial up the Internet's services until your modem can connect with a computer that's part of the Internet. Once you have an "Internet dial tone," you can access the Internet's resources.

Because the Internet is a cooperative effort, there is no "Internet, Inc." to sign up with and send a check to. Instead, you must find a service that is plugged into the Internet. Not every online service is part of the Internet, and, as you will see, the tools available at various services differ considerably. The Internet "dial tone" can take many forms, so there are many choices and features to consider.

Your computer gains access to the Internet through a computer called a *host.* The company or institution that operates the host is called an *Internet service provider* (or *ISP*). Because of the array of computers and people that make up the Internet, service providers range from billion-dollar commercial online services to tiny bulletin board systems running out of someone's basement. Regardless of where you're connected, your service provider is the person or company on the other side of your Internet link.

Getting telephone service is simple and decision-free; you ask the local phone company for a line and you get it. But getting an Internet "dial tone" isn't as straightforward—you have to choose your access method, think about what services you'll use, compare prices, and, finally, sign up with a service provider. Because you connect to the Internet with a phone call, you probably want an Internet service provider that has a phone number in your area, lest you be forced to pay the phone company steep long-distance charges. In the past year or two, Internet service providers have been popping up like weeds, and it has become much easier to find a local "on ramp" to the Internet, even if you don't live in a metropolis.

Individuals and small businesses can best access the Internet using a dial-up connection—which means that your modem dials a host computer to access the Internet. Your phone line is tied up only while you're using the Internet. When you're done, you hang up the modem and free up the phone line. All you need is a computer, a modem, a plain old phone line, an account with a service provider, and Internet interface software such as Gopher or Telnet.

If you already know someone who is part of the Internet community, ask that person how to get access. If that person lives near you and is happy with the service, chances are that service will be right for you, too.

Besides the tools available to you, the service provider you choose determines the type of interface you see once you're online. The interface determines how the Internet appears to you (as simple text on the screen, as a menu interface, or as a graphic screen with sound).

Command-Line Access for Simple Needs

Command-line access through a local Internet service provider is cost-effective, simple to learn, and similar across different computing platforms. This kind of access is easy to use and, unlike Internet Protocol (IP) links, which are described more fully in the next section, command-line access doesn't require complicated software configuration on your own computer.

Command-line access is easy to set up; it is generally a little less expensive than other types of Internet connections. Command-line access works reliably from any kind of personal computer because specialized software isn't needed.

Dial-Up IP for Direct Internet Access

Dial-up IP links such as Serial Line Internet Protocol (SLIP) and Point-to-Point Protocol (PPP) connect your computer directly to the Internet while you're dialed in. You can run networking applications right from your own

computer instead of relying on another host. IP links are more robust than other types of accounts—for example, they enable you to connect to multiple sites simultaneously. You can have an FTP session in one window, Telnet in another, and Gopher in yet another. With an IP link, you're generally not married to any particular software. If you don't like the software you're using for e-mail (or for reading Usenet news, or whatever), you can switch to something else.

Because the software for a dial-up IP link resides in your computer, you must find it and install it yourself. You also have to configure many pieces of software on your computer and take complex steps that command-line users need not worry about. The software you need includes several programs: one each for e-mail, FTP, Telnet, Gopher, World Wide Web, and so on. If you're new to the Internet, setting up this software can be a frustrating welcome to the "information superhighway." However, once everything's set up the first time, IP links are easier to use than command-line accounts.

Finding a public access site for a command-line account or dial-up IP link is usually more difficult than joining a commercial online service. Although there are only a few commercial online services, there are hundreds of service providers offering command-line accounts. Each one seems to offer different features, pricing structures, and local access locations.

Commercial Online Services for Multipurpose Access

Unlike providers that offer only a link to the Internet, commercial online services, such as CompuServe, eWorld, America Online, and Delphi, offer a variety of services other than Internet access. These services include databases, online shopping, games, and file libraries.

Every major online service offers some degree of Internet access, though they don't offer every tool. For example, most don't have World Wide Web browsers (though they're certainly coming). And commercial online services are clamoring to provide the "whole enchilada" of Internet tools, which I suspect they all will, very soon.

Commercial online services are almost always more expensive than IP links and they may offer features you don't need—especially if all you want is a pipeline to the Internet. But a notable advantage to commercial online services is that, unlike most public access providers, they can be accessed with a local phone call from hundreds of cities through packet-switching networks such as SprintNet and Tymnet.

Your choice of online services depends on what type of services you want. Delphi was the first nationwide service to provide full Internet access. Its text-only command-line interface won't win any beauty contests, but it allows you to find your way around easily enough. America Online (AOL) and eWorld offer snazzy graphical interfaces. As of this writing, AOL provides e-mail, Gopher, FTP, and WAIS access. eWorld has lagged behind, offering only e-mail access, but other Internet tools should be available very soon. (However, eWorld has other advantages: It's home to lots of source code, databases, and other developer information that isn't available on the other online services. eWorld is, of course, owned by Apple Computer, Inc., and it sometimes pays to get your information straight from the source.)

AOL's voice information line is 800-827-6364 or 703-448-8700. eWorld's information line is 800-775-4556 or 408-974-1236. For information about Delphi, call 800-695-4005 or send a fax to 617-476-9600.

Programmer Resources on the World Wide Web

The World Wide Web (or WWW) is an easy-to-use, graphical

Get Thee to the Library!

There is an endless variety of books available that can help you get connected and learn your way around the Internet. Here are some of my favorite books for Internet "newbies."

• *Connecting to the Internet* by Susan Estrada. O'Reilly & Associates, 170 pages, $15.95. ISBN: 1-56592-061-9.

This small book focuses on choosing the best type of network connection for your personal, school, or business needs, and how to get the best price for the type of access you require. It explains the differences between SLIP, PPP, command-line accounts, and other options. It includes an extensive list of Internet service providers. This is a single-purpose book, telling how to choose a connection and get online; it doesn't try to teach you how to use the Internet once you've connected.

• *Internet Starter Kit for Macintosh* by Adam Engst. Hayden Books, 640 pages, $29.95. ISBN: 1-56830-111-1.

If you use a Macintosh and only have $30 in the world to spend, buy this book. This is simply the best Internet book for Macintosh users that was ever—or could ever be—written. It claims to be "everything you need to get on the Internet" and it delivers: everything from the software you'll need to get connected to 1,000 pages of Internet knowledge. This is an excellent, enlightening, fun book. If you own a Macintosh and are on the Internet (or want to connect), this is the one to get.

• *The Whole Internet User's Guide and Catalog* by Ed Krol. O'Reilly & Associates, 572 pages, $24.95. ISBN: 1-56592-063-5.

This book covers the basic utilities used for accessing the network and then guides users through the Internet's millions of files. It includes a resource index that covers a broad selection of approximately 300 important resources available on the Internet. The second edition has been completely updated to reflect the development of new Internet tools, including Mosaic, MIME, tin, pine, xarchie, and a greatly expanded resource catalog. I highly recommend this book.

• *Your Internet Consultant—The FAQs of Life Online* by Kevin M. Savetz. Sams Publishing, 550 pages, $25 ($35.95 Canada). ISBN: 0-672-30520-8.

This book (written by yours truly) provides simple, enlightening answers to hundreds (361, to be exact) of frequently asked questions about the Internet, as well as answers to a few questions that aren't asked frequently, but should be. The book is arranged in a question-and-answer format, making it blissfully simple to find just the information you need. I think you'll find the book unique, useful, and a little silly.

hypertext resource that makes navigating the Internet simple. Not all Internet connections have Web access, but its ease of use and incredible popularity are making it a staple of Internet connections. Here's a sample of the good stuff programmers can find on the Web:

• *Apple Computer's Web Page.* Apple's Web resource is a gem, offering enough consumer and technical information to keep you busy into the wee hours. Developers will revel in online versions of *develop* (the Apple Technical Journal), *Apple Directions,* a complete online database of Macintosh technical notes and developer notes, sample code and sample applications, Apple peripherals documentation, system software, and more. You'll find this programmers' paradise at http://www.info.apple.com/, and it's worth the price of an Internet connection all by itself.

• *Information about MetroWorks CodeWarrior.* You'll find this information at http://power.globalnews.com/articles/4992.htm.

• *Macintosh WWW Page Development Resources.* This page, which is located at http://www.uwtc.washington.edu/Computing/WWW/Macintosh.html, includes a listing of resources that aid the development of WWW servers and data on Macintosh systems.

• *MacHTTP information.* If you're thinking of providing information on the World Wide Web yourself, MacHTTP is the program you need. MacHTTP is a fast and full-featured HTTP server that runs on the Mac. This information is available at http://www.biap.com/.

Usenet—The Internet Bulletin Board

Usenet is the world's largest distributed bulletin board system, shared by millions of people swimming the seas of the Internet. Folks on Usenet talk about everything—everything!—you can think of, from square dancing to motorcycle maintenance and from the Swedish Chef to Ronald Reagan. Usenet is simply the largest, most active, and most varied discussion forum in the world. As you might expect, there are many forums on Usenet for programmers. Here you can obtain public domain source code, ask questions about programming (and answer some), and find deliciously useful FAQs—lists of frequently asked questions and their answers.

Below is a list of newsgroups of interest to programmers. Most of their names are self-explanatory; for instance, comp.sys.mac. hypercard is a forum for discussing HyperCard on the Macintosh. Most groups are places for discussion—questions and answers, arguments, and conversations abound on those newsgroups. Others (usually with the word *source* in the name) are dedicated to source code postings. Still others (those with the word *binaries* in the name) contain only ready-to-run programs.

Here are the best and brightest Usenet groups for those interested in Macintosh programming:

• CodeWarrior discussions—comp.sys.mac.programmer.codewarrior

• programming Q&As—comp.sys.mac.programmer.help

• announcements of interest to developers—comp.sys.mac.programmer.info

• Macintosh programming discussions that don't fit in other groups—comp.sys.mac.programmer.misc

• programming tools discussions—comp.sys.mac.programmer.tools

• Newton programming talk—comp.sys.newton.programmer

• HyperCard and HyperTalk discussions—comp.sys.mac.hypercard

• discussions about PowerPC chips and computers—comp.sys.powerpc

• general discussions about programming—comp.programming

• general discussions about object-oriented programming—comp.sys.mac.oop.misc

• discussions about MacApp version 3—comp.sys.mac.oop.macapp3

• discussions about TCL—comp.sys.mac.oop.tcl

• collections of ready-to-run applications—comp.binaries.mac

• information about programming games on any platform—rec.games.programmer

You may find the comp.lang newsgroups useful, too. With these groups you can discuss any language you can imagine, from Ada to Verilog. Most aren't specific to Macintosh programming, and some are explicitly dedicated to talking about programming on other platforms. For instance, there's comp.lang.apl, comp.lang.forth.mac, comp.lang.pascal, comp.lang.scheme, and too many others to list here.

A variety of newsgroups are dedicated to source code and discussions about it. Here are some source-oriented newsgroups you might find interesting: alt.sources.mac, alt.sources, comp.sources.wanted, comp.sources.games, and comp.sources.reviewed.

FTP Site Resources

FTP stands for File Transfer Protocol. It's a tool that allows you to copy files between computers on the Internet. You can move your own files between computers, or, more commonly, use "anonymous FTP" to access huge online software libraries. Thousands of sites provide anonymous FTP service, allowing you to download everything from electronic books and magazines, to satellite pictures of the weather, to public-domain utilities and games for your personal computer. Here are a few interesting sites for Macintosh programmers:

• *mac.archive.umich.edu.* This is my favorite archive site for cool Macintosh stuff, complete with games, utilities, developer tools, virus programs, and anything else your heart could desire. Look in the directories /mac/development/source for ready-to-compile program source code and /mac/development/source/snippets for code fragments. (If this site is too crowded, you can access a copy of it at mirror.aol.com/pub/mac.)

• *sumex-aim.stanford.edu.* This Stanford University resource is one of the finest collections of Macintosh software anywhere. Sumex is home to hundreds of megabytes of Macintosh freeware, shareware, and demonstrations of commercial software. Hundreds of programs and source code snippets are available in the directories /info-mac/dev and /info-mac/dev/src. And while you're there, pick up the latest edition of the comp.sys.mac.programmer digest—containing all the good stuff posted to the Usenet newsgroup of the same name. You'll find it in the directory /infomac/ per/csmp. (If this site is too crowded, you can access a copy of it at mirror.aol.com/pub/info-mac.)

• *nic.switch.ch.* This site contains source code of all kinds, and is perhaps the most comprehensive Macintosh source code archive. It contains source for many UNIX-ported utilities as well as a lot of original Macintosh source code. Look in the directory /software/mac/src.

• *ftp.cc.umanitoba.ca.* This site is home of the *develop* magazine mailing list, and it also has lots of random stuff you can't find elsewhere. It's worth a look, so check out the directory /Mac-Develop/Source.

• *ftp.apple.com.* This is Apple's semi-official repository for system software, developer tools, source code, Macintosh technical notes, and other things that come more or less straight from Apple. Unfortunately, the materials at this site are arranged poorly, but you can unearth some true Apple treasures. You can get System 7, Tune-ups, QuickTime, and much more. (Start by perusing the /pub/dts directory.)

Mailing Lists

Even if you don't have access to the World Wide Web or FTP, chances are your Internet service includes electronic mailing lists. A mailing list is simply an e-mail address that redistributes its mail, usually on a specific topic, to other addresses. When someone sends mail to the mailing list, the message is redistributed through e-mail to the list's "subscribers." It is a way to reach a few dozen or a few thousand people who are interested in a specific topic.

Most mailing lists are available to the Internet public, so anyone interested in a topic may join that list. Here are a few lists that may be of interest to developers:

• *QuickTime programming.* This is a mailing list for discussions of QuickTime programming issues. To subscribe, send e-mail to listproc@abs.apple.com with a subject line that is blank and a text body that contains the phrase "subscribe quicktime-dev Yourfirstname Yourlastname".

• *think-c.* This is a discussion of programming with Think C. It's also a good place to look for sample source code. To subscribe, send e-mail to think-c-request@ics.uci.edu.

• *AOCE.* This is a forum in which PowerTalk users, PowerShare administrators, and software developers share advice, problems, and so on, with each other and with Apple. To subscribe, send e-mail to aoce-list-request@umich.edu.

• *Macscripting.* This is a forum for any and all discussion about scripting on the Macintosh, whether it concerns AppleScript, Userland Frontier, or another system. To subscribe, send e-mail to listserv@dartmouth.edu.

• *apple-internet-users.* This forum is devoted to discussions on the use of Macintosh Internet client software, such as Eudora, Anarchie, and Netscape. To subscribe, send e-mail to listproc@abs.apple.com and put "subscribe apple-internet-users Your Name" in the body of the message.

• *apple-internet-providers.* This list provides discussions on Macintosh Internet server software, including programs such as MacHTTP, FTPd, and MailShare. To subscribe, send e-mail to listproc@abs.apple.com with "subscribe apple-internet-providers Your Name" in the body of the message.

By the way, a searchable database of Macintosh-related mailing lists is available on the World Wide Web at http://ici.proper.com/1/mac/mailing-lists.

Newsletters

A wide variety of free newsletters and magazines are available on the Internet, too. Here are a few of interest:

mac.archive.umich.edu is my favorite archive site for cool Macintosh stuff, complete with games, utilities, developer tools, virus programs, anything else your heart could desire.

• *PowerPC News.* If you are interested in Power Macintosh computers, you should definitely check out the PowerPC News server at http://power.globalnews.com. It's perfect for developers and end-users who want the latest news about the PowerPC microprocessor family and all the PowerPC platforms. PowerPC News offers a free electronic magazine, published every two weeks through e-mail. To subscribe, send e-mail to add@power.globalnews.com.

• *Edupage.* This is an excellent thrice-a-week newsletter summarizing news items on information technology. *Edupage* is a miniature *MacWEEK*—only you don't have to lie through your teeth to get a free subscription. To add your name to the *Edupage* distribution list, send e-mail to listproc@educom.edu. In the body of the message type "sub edupage Firstname Lastname".

• *TidBITS newsletter. TidBITS* is a wonderful online newsletter for Macintosh people. It's a free weekly electronic publication that reports on interesting products and events in the computer industry, with an emphasis on the world of the Macintosh. Published by Adam Engst (author of *The Internet Starter Kit for Macintosh*), it includes lively features, hot news, and roundups of all the hardware and software reviews in every other major Macintosh publication. For information on how to subscribe to *TidBITS* and where to find back issues, send e-mail to info@tidbits.com. If you're on the World Wide Web, check out the *TidBITS* home page at http://www.dartmouth.edu/pages/TidBITS/TidBITS.html.

A Final Word

Gaining access to the Internet is well worth the effort. There isn't a library in the world that offers you as much Macintosh programming information. So next time you're up at 3 A.M., spinning your wheels on a tough programming problem, take a break and hunt for buried treasure on the Internet. ♣

Kevin Savetz (savetz@northcoast.com) is a computer journalist living in northern California. He is author of Your Internet Consultant—The FAQs of Life Online *from Sams Publishing.*

APDA Ordering Information To place an APDA order from within the United States, contact APDA at 800-282-2732; in Canada, call 800-637-0029. For those who need to call the United States APDA office from abroad, the number is 716-871-6555. You can also reach us by AppleLink; the address is APDA.